
From: Kimberly.Henderson@CH2M.com
Sent: Monday, January 30, 2017 11:36 AM
To: Brooks, George P CIV; Janda, Danielle L CIV; Slack, Matthew L CIV SEA 04 04N; Edwards, Zachary L CIV SEA 04 04N; Robinson, Derek J CIV NAVFAC HQ, BRAC PMO
Cc: Kira.Sykes@CH2M.com; SHay@cabreraservices.com
Subject: [Non-DoD Source] RE: Review: HPNS ROCs for discussion
Attachments: Radionuclides for Evaluation.pptx

Thanks Pat, we accepted the changes. Does anyone else have comments? I'm planning to send this on to the Tiger Team later this afternoon along with the agenda for tomorrow's call.

-----Original Message-----

From: Brooks, George P CIV [mailto:george.brooks@navy.mil]
Sent: Friday, January 27, 2017 8:34 AM
To: Hay, Scott <SHay@cabreraservices.com>; Henderson, Kimberly/SDO <Kimberly.Henderson@CH2M.com>; Janda, Danielle L CIV <danielle.janda@navy.mil>; Slack, Matthew L CIV SEA 04 04N <matthew.slack@navy.mil>; Edwards, Zachary L CIV SEA 04 04N <zachary.edwards@navy.mil>; Robinson, Derek J CIV NAVFAC HQ, BRAC PMO <derek.j.robinson1@navy.mil>
Cc: Sykes, Kira/PDX <Kira.Sykes@CH2M.com>
Subject: RE: Review: HPNS ROCs for discussion [EXTERNAL]

This time with the file.

-----Original Message-----

From: Hay, Scott [mailto:SHay@cabreraservices.com]
Sent: Thursday, January 26, 2017 4:57 PM
To: Kimberly.Henderson@CH2M.com; Brooks, George P CIV; Janda, Danielle L CIV; Slack, Matthew L CIV SEA 04 04N; Edwards, Zachary L CIV SEA 04 04N; Robinson, Derek J CIV NAVFAC HQ, BRAC PMO
Cc: Kira.Sykes@CH2M.com
Subject: [Non-DoD Source] Review: HPNS ROCs for discussion

PLEASE REVIEW. For distribution Monday January 30th to Technical Team members.

Presentation of radionuclides for evaluation. One picture (thanks Kira) and one page of text. Hopefully little or no discussion required, just making interpretation of statistical results manageable.

Scott Hay | Principal Health Physicist

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Radionuclides for Data Evaluation

- All Radionuclides Included in Statistical Evaluation
 - Limit presentation and interpretation of results to informative radionuclides
- Primary Radionuclides
 - Ra-226 and Cs-137 are ROCs, most likely targets for misrepresentation
 - Bi-214 often used as surrogate for Ra-226 (Pb-214 for equilibrium only)
 - K-40 and Ac-228 naturally occurring indicators of expected distributions
 - Bi-212 and Pb-212 for equilibrium only
- Secondary Radionuclides
 - Sr-90 analyzed for 10% of samples, separate analysis offsite lab only
 - U-235 possible indicator to explain unusual Ra-226 results from 186 keV peak
- As Needed Radionuclides
 - Am-241, Co-60, Eu-152, Eu-154, Pb-210, Pa-234, Tl-208, Th-232, Th-234, and alpha-emitting ROCs
 - Limited number of results for other than gamma-emitting radionuclides
 - Unlikely to be present at concentrations significantly different from zero
 - Other members of natural decay series more likely to provide usable information



Primary Radionuclides for Data Evaluation

Cs-137, Ra-226, Bi-214, Pb-214, K-40, Ac-228, Bi-212, Pb-212

Secondary Radionuclides

Sr-90, U-235

As Needed Radionuclides

Am-241, Co-60, Eu-152,

Eu-154, Pa-234, Pb-210

Pu-238, Pu-239,

Th-230, Th-234

Tl-208